

middle of costa, an oblique dash followed by a triangular spot near apex, and a submarginal stripe, with zigzag inner edge dark chocolate-brown; outer border and fringe pale brown, traversed by two straight dusky lines; a minute brown spot at middle of inner margin: base and sides of palpi chocolate-brown. Below silvery white; the costal area of primaries pale brownish. Expanse 11 millimetres.

Like *A. insons* of Felder, but only half as large; also allied to *A. chrysogyrans*, Walker (MS.?).

150. *CYDOSIA NOBILITELLA*, Cramer, Pap. Exot. iii. pl. 264. fig. G (1782).

151. *TINEA?*, sp.

This insect has lost all the fringes of its wings, so that I cannot recognize its genus. The neuration of the secondaries seems to be exactly that of *Tinea*; but the head is too broad, and the palpi are too long and robust; in coloration and the general form of its wings it is most like *Cerostoma vittella*.

152. *PTEROPHORUS ASPILODACTYLUS*, Walker, Lep. Het. xxx. p. 941. n. 43 (1864).

## 5. Descriptions of new Land-Shells from Japan and Borneo. By EDGAR A. SMITH, F.Z.S.

[Received April 15, 1878.]

### *HELIX* (*CAMENA*) *LEWISII*.

*Testa dextrorsa, conoideo-globosa, subanguste umbilicata, oblique striata, alba, epidermide tenui luteo-olivacea induta, fascia angusta fusca ad peripheriam picta; anfract. 6½, convexiusculi, sensim crescentes, ultimus rotundatus, antice breviter descendens; apertura obliqua, intus alba; perist. undique expansum, margine columellari sordido-roseo tincto, superne late expanso et reflexo.*

Diam. max. 35 mill., min. 29; alt. 24.

*Hab.* Japan (*George Lewis*).

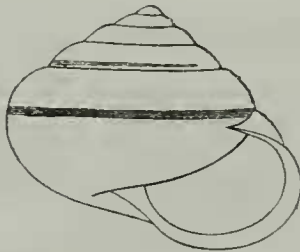
Perhaps the most closely allied Japanese species to this one is *H. miranda*, A. Adams. From it *H. lewisii* differs in having a more conical spire, a narrower umbilicus, finer oblique striæ, and no spiral sculpture.

The oblique striæ at the suture are rather deeply incised and more crowded than on the other parts of the whorls, many of them extending only about a line from the suture and then gradually fading away. The first four whorls differ from the last two in being obliquely punctato-striate, instead of exhibiting an ordinary striation. The brown band is situated a very little above the middle of the body-whorl, and passing just above its suture, is visible on two

or three of the preceding volutions. The umbilicus is very deep and penetrable to the apex of the shell, but rather narrow, occupying about one seventh of the smallest diameter.

The peristome rather broadly expanded and white, with the exception of the columellar and basal margins, which are stained with a dirty pinkish colour. Over the umbilicus it is broadly expanded, reflexed, and joined to the upper margin by a thin callosity. This species is quite distinct from *H. myomphala*, Martens, and, al-

Fig. 1.

*Helix (Camena) lewisii.*

though agreeing in the style of coloration, differs in form and the umbilicus.

The single example in the British Museum was presented by Mr. George Lewis.

#### HELIX (CAMENA) CONGENITA.

*Testa suborbicularis; spira breviter conica, subaperte umbilicata, tenuiuscula, pallide straminea, zonalata interrupta irregulari fusca, vel strigis latis fuscis infra medium anfr. ultimi ornata et hic illic supra strigis obliquis paucis indistinctis notata, interdum ad peripheriam zona angusta fusca cincta, et umbilico aliquando fusco tincto; anfractus 5½-6, convexiusculi, lineis incrementi elevatis, filiformibus, obliquis, flexuosis et striis minutissimis spiralibus inter lineas elevatas sculpti, ultimus angustiusculus, antice prope labrum breviter subitoque descendens; apertura subhorizontalis, intus livida, fusco tincta; peristoma tenue, livido-fusco et albo diverse pictum, undique reflexum et expansum.*

Diam. max. 30 mill., min. 25, alt. 19; apert. 16½ long., 14 lat.

*Hab.* Japan.

This species partakes in a great measure of the form of *H. congener*, recently described by me in these 'Proceedings' (1878, p. 105). The spire, however, is a little more elevated, the last whorl a trifle less robust, and the aperture narrower.

The sculpture of this species is much coarser, the lines of growth being developed into thread-like liræ, and the spiral striæ invisible to the naked eye, and more conspicuous between than upon the

oblique thread-like lines of growth when viewed under a lens. The descent of the body-whorl is very sudden and brief. The whorl, owing to the expansion of the peritreme, has a constricted appearance in that part.

The umbilicus is a little more open than in *H. congener*, and consequently more perspective. The coloration of this species is not easily definable. The ground-colour is pale straw, the oblique raised liræ being more opaque and yellower. The body-whorl below the periphery is stained with brown, or looks as if it were scorched. The colouring takes the form of a very broad interrupted transverse band, or, in other words, of wide blotches or stripes. The latter are sometimes continued upon the upper half of the whorl, and are also here and there faintly observable on the upper volutions. One

Fig. 2.

*Helix (Camena) congenita.*

specimen has a narrow peripheral brown band. The body-whorl is stained with brown outside the tip; and this, owing to the thinness of the shell, produces a brownish labrum, which in some places, particularly at the extreme edge and in the columellar region, is somewhat whitish. It is rather widely expanded at the base and columella, and is a trifle reflexed everywhere. The aperture is very transverse, in fact almost horizontal; it is of a livid white colour within, exhibiting the brown marking of the exterior.

#### Subgen. MYXOSTOMA, Troschel.

*Testa plus minusve discoidea, late umbilicata; apertura circularis; peristoma duplex, margine interiore superne plerumque leviter sinuato, externo supra sinum alatum expanso. Operculum corneum, crassum, inferne paulo concavum, in medio nucleo prominulo, extus marginibus anfractuum lamellosis.*

This section of *Cyclophorus* agrees with *Pterocyclos* in the form of the shell and its peristome, but differs in having a thick horny operculum, with the margins of the whorls lamellated exteriorly, that of *Pterocyclos* being calcareous and spirally laminated.

#### CYCLOPHORUS (MYXOSTOMA) BATHYRHAPHE.

*Testa discoidea, apertissime umbilicata, spira parum elevata, sub epidermide luteo-olivacea sordide vel cæruleo-albida; anfr. 5½, rotundati, sutura valde canaliculata sejncti, ultimus sat magnus*

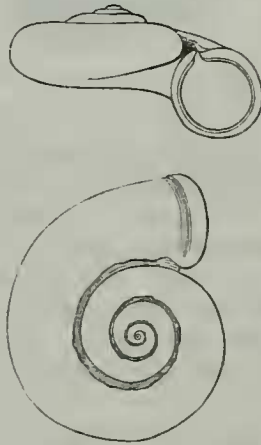
*superne ad canalem suturalem carina lamelliformi munitus, lineis incrementi tenuibus leviter obliquis sculptus; apertura oblique circularis, intus cæruleo-alba; peristoma duplicatum, margine interiori lævi vix expanso, superne prope anfractum parum profunde sinuato, externo anguste expanso, superne ala parva leviter fornicata instructo. Operculum corneum, concentricum, multispirale, utrinque concavum, extus lamellis brevibus striatis obtectum.*

Diam. max. 31 mill., min. 22, alt. 15, apert. diam. intern. 9.

*Hab.* Borneo (G. B. Sowerby).

Shell discoidal, openly umbilicated, and clothed with a thin uniform yellowish-olivaceous epidermis. Beneath this it is of a dirty or bluish-white tint. The spire is only slightly raised above the last whorl. The whorls, about five in number, are convex and bordered by a deep and broadish channel at the suture, the outer margin of the canalication being produced into a thin lamellar ridge or keel; and outside this carina the whorls are a trifle depressed or excavated.

Fig. 3.



*Cyclophorus (Myxostoma) bathyraphe.*

The sculpture consists merely of the lines of growth, which are fine and somewhat oblique. The aperture is slopingly circular, bluish white, and has a double lip. The inner edge is thicker than the outer, and scarcely at all everted. The sinus is distinct, moderately deep, and situated at the termination of the sutural canalication. The outer rim is somewhat expanded but not reflexed, narrowest on the left side where it touches the whorl, and thin and sharp at the extreme edge. Above it is expanded in the form of a small wing, which slightly arches over the sinus and has a tendency to a deflection in front.

This species in the nature of its operculum agrees with the genus *Myxostoma*, which was founded by Troschel ('*Zeitschrift für Mala-*

kozologie,' 1847, p. 44) for the reception of the curious shell figured by Martyn under the name of *Lituus brevis*.

It only differs from *Myxostoma* in having the inner lip of the aperture sinuated above, and in the wing-like expansion of the outer rim not leaning upon the penultimate whorl. The canaliculate suture, I presume, is only a specific character.

In all respects agreeing with this species are two others, *Cyclostoma planorbulus*, Lamarck, and *Pterocyclos albersi*, Pfr. The former has had several localities quoted as its home, among which are Senegal?, Philippine Islands, Bengal, Java, Borneo, Sumatra (in Mus. Cuming), and Pulo Condore Island. Which of these is the true habitat I cannot say with certainty, nor am I aware that it has ever been definitely settled; there is, however, some slight evidence to show that the last locality is the correct one. We are also in the same state of uncertainty respecting *Pt. albersi*. Pfeiffer described the species not knowing its locality; and Benson ('Annals of Nat. Hist.' 1857, vol. xix. p. 208) is wrong in attributing a shell found at Teria Ghát, Khasia hills, India, to this species; for it was, as shown by Hanley ('Conchologia Indica,' p. 56), only a variety of *Pt. parvus*, Pearson.

Here, then, is a small group of four species, all having a Pterocycloid expansion of the outer rim of the lip, and an operculum of precisely the same structure. Three of them have channelled sutures to the whorls, are of a depressed orbicular form, and have the inner lip sinuated at the termination of the sutural channel. The fourth (*brevis*) and the type of *Myxostoma* lacks the channelled suture, and has only the slightest trace of a sinus in the lip—both of which characters, especially the former, I consider more specific than generic. From *Cyclophorus* with its simple concentric thin horny operculum and simple lip to the aperture, the different operculum and expansion of the lip of *Myxostoma* warrant, at all events, a subgenerie separation.

There are two or three Burmese species (*Cyclophorus pinnulifer*, Benson, *C. calyx*, Benson, and *C. hispidulus*, Blanford) which will also conveniently range under this genus. They are depressed sub-discoid shells with a double rim to the aperture, the outer lip with a small superior wing-like expansion, and the operculum thick, horny, with the outer margins of the whorls lamellated. For this group Blanford proposed the name *Scabrina* (Journ. Asiatic Soc. Bengal, 1863, p. 322).

The museum is indebted to Mr. J. B. Sowerby for a single specimen of this interesting species.